# Wireless –G Range Extra USB Adapter

# Users Manual

**Model # AWN-11G-USB**

# USING THIS DOCUMENT

This document provides detail user guide for Advantek Networks AWN-11G-USB, Wireless-G USB Adapter operation and set-up instructions.

## Content


**Chapter 1**
**Introduction ---------- 3**

**Chapter 2**
**Specifications ---------- 4**

**Chapter 3**
**Installation ---------- 5**
**3.1 Installation ---------- 5**
**3.2 Uninstall ---------- 10**

**Chapter 4**
**Wireless LAN Management Program ---------- 12**
**4.1 Introduction of Main Window ---------- 12**
**4.2 Station Mode ---------- 20**
**4.3 AP Mode ---------- 27**

# Chapter 1: Introduction

Thank you for purchasing Advantek Networks AWN-11G-USB, Wireless-G USB Adapter. AWN-11G-USB is a perfect combination of both performance and cost-effective solutions. We hoped that you can enjoy both the freedom of wireless technology and reliability of this product at the same time.

Our AWN-11G-USB provides a full compatibility of all the IEEE 802.11 b/g protocols that passes the Wi-Fi tests; and ensures the interoperability of these standards. With AWN-11G-USB on hand, it means you can connect to the internet wireless world without any difficulty.

AWN-11G-USB also equip with full security option setting from the 64/128bits WEP encryptions, second generation WPA-PSK encryption, to the most advanced WPA2-AES encryption. WPA2 is the latest security standard currently approved by Wi-Fi standards.

Saving mode, Adhoc wireless Lan, Wake-on-Lan (WOL) and other exciting features are also included in the AWN-11G-USB. This user manual will guide you through these exciting features in the following chapters and we believed that you will enjoy the performance and ease of use on our AWN-11G-USB.

# Chapter 2: Specifications

***Host system connections***

| | |
|---|---|
| **Interface** | Fully complies with USB 2.0 or 1.1 |
| **USB date transfer rate** | USB high speed (480Mbps), and full speed (12Mbps) |

***Wireless LAN (WLAN) environment connections***

| | |
|---|---|
| **WLAN Interface** | Multimode features |
| | Fully complies with IEEE 802.11 b/g specifications |
| **WLAN transfer rate** | 802.11b: DQPSK with data scrambling capability to provide data rate of 1,2,5.5 and 11Mbps |
| | 802.11g :A high-speed Fast Fourier |
| | Transform(FFT)/Inverse Fast Fourier Transform(IFFT) provide data rate of 6,9,12.18,24,36,48 and 54Mbps |
| **WLAN Frequency Band** | 2.4 ~ 2.497 GHz ((Industrial Scientific Medical Band) |
| **Operation Channel** | Channel 1 ~ 11 |
| **Coverage Area** | Indoors:100m with straight path Outdoor: 300m |
| **Compatibility** | Fully compatible to IEEE 802.11 b/g devices |
| **Security** | Hardware-based IEEE 802.11i encryption/decryption engine, including 64-bit/128-bit WEP, TKIP, and AES |
| **Antenna** | Detachable dipolar antenna |
| **LED present (Green/Red light)** | On: link is on |
| | Off: ling is off |
| | Quick blinking: data transfer |
| | Slow blinking with 5 times: scan wireless connections |
| **Wake-on-WLAN** | Wake up system by wireless LAN(AP mode) |

**SYSTEM REQUIREMENT**

Windows Operating System: Windows 98SE, ME, 2000, XP 32/64 bit, Vista 32/64 bit.

**PACKAGE CONTENTS**

- Wireless LAN USB Adapter
- Antenna
- Installation CD
- User's Manual

# Chapter 3: Installation / Uninstall

**Warning!** Do not cover or block the airflow to the adapter. The adapter will reach a high temperature during use.

## 3.1 Installation

Before you proceed with the installation, please notice the following descriptions.

Note1: The following installation was operated under Windows Vista. (Procedures are similar for Windows 98SE/ME/2000/XP.)

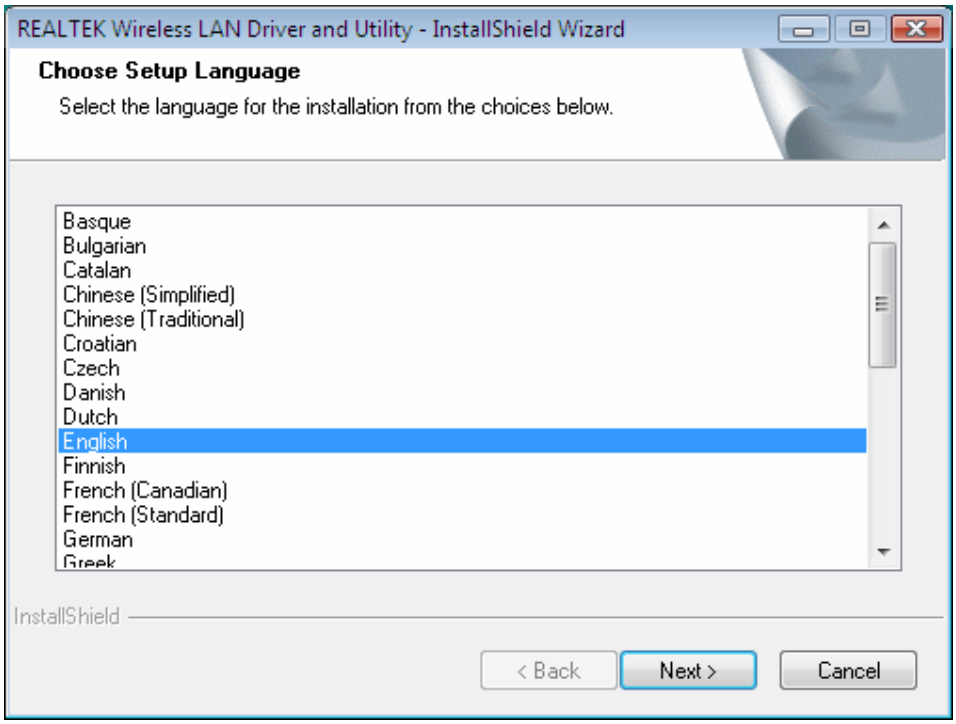
Note2: If you have installed another wireless adapter driver & utility before, please remove the previous ID and version first before installing this device.

1. Do not plug the AWN-11G-USB adapter into your computer USB port before installing the software program. Insert the CD that come with this product, then auto installation window will appear on you monitor screen:

2. While the following screen pops out, click Driver Installation

3. Click Driver Installation

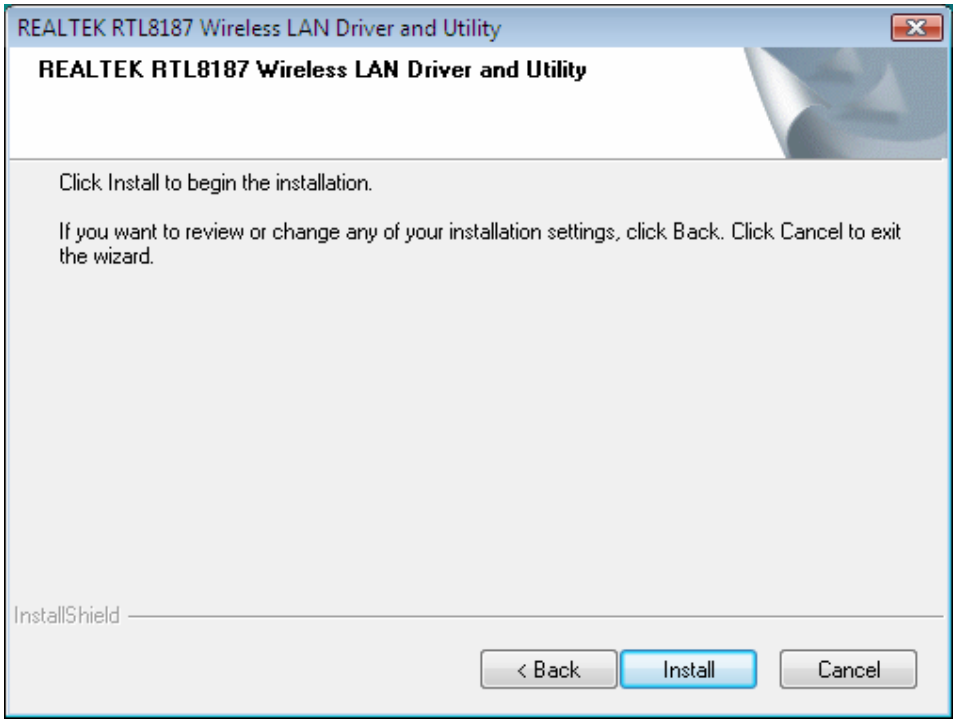
4. Choose a set up language. Click Next to process the installation.



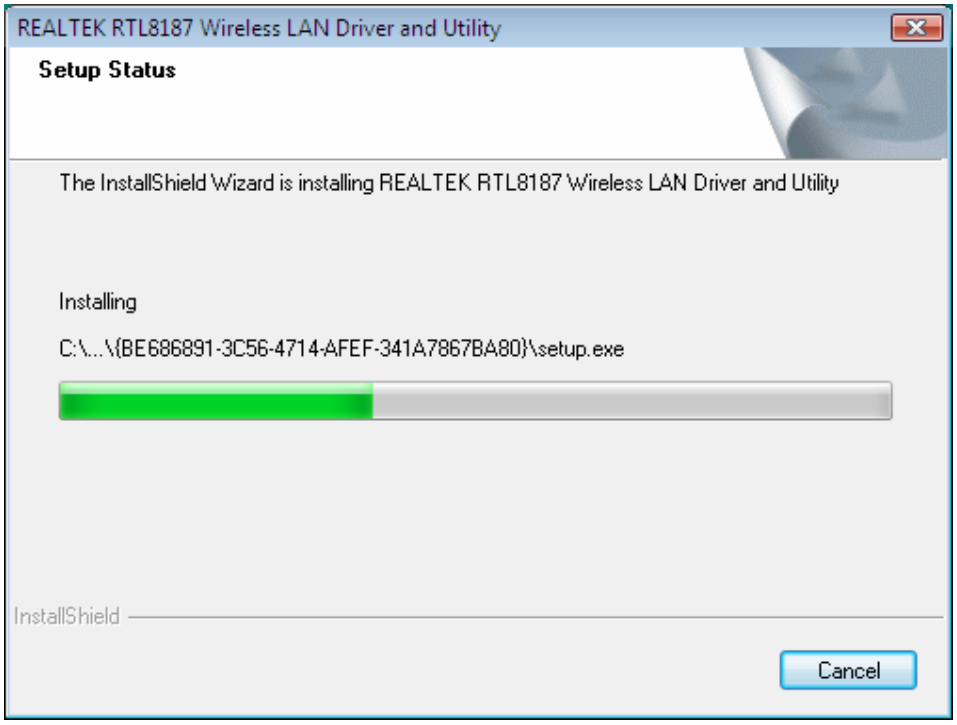
5. Click **Next** at the following screen

REALTEK RTL8187 Wireless LAN Driver and Utility
REALTEK RTL8187 Wireless LAN Driver and Utility
The InstallShield Wizard will install REALTEK RTL8187 Wireless LAN Driver and Utility on your computer. To continue, click Next.
< Back
Next >
Cancel

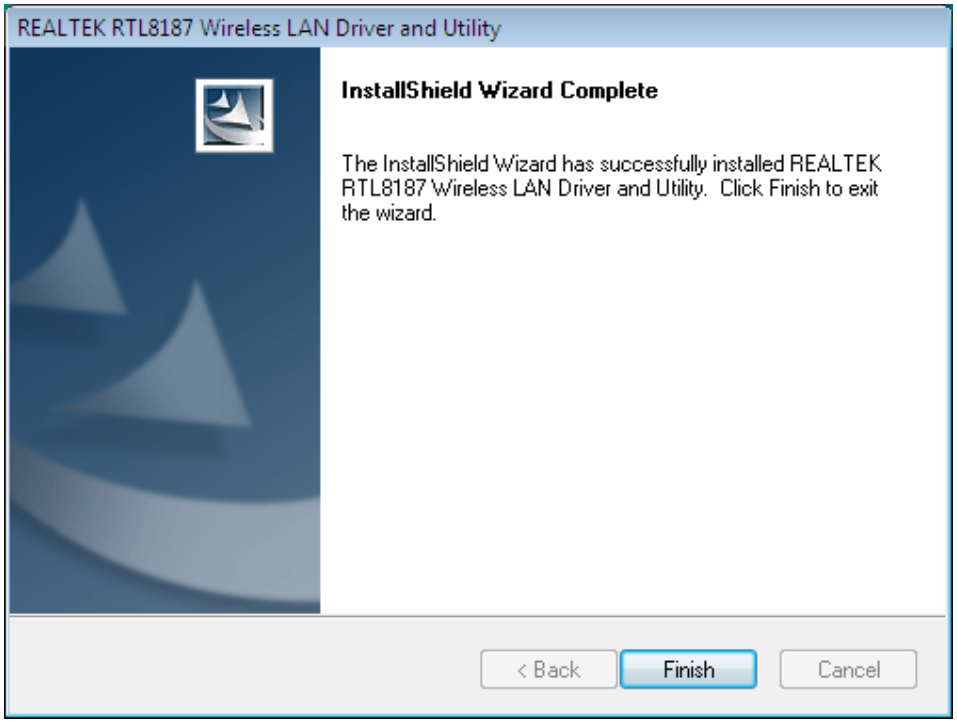
6. Click **Install** at the following screen


REALTEK RTL8187 Wireless LAN Driver and Utility
REALTEK RTL8187 Wireless LAN Driver and Utility
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

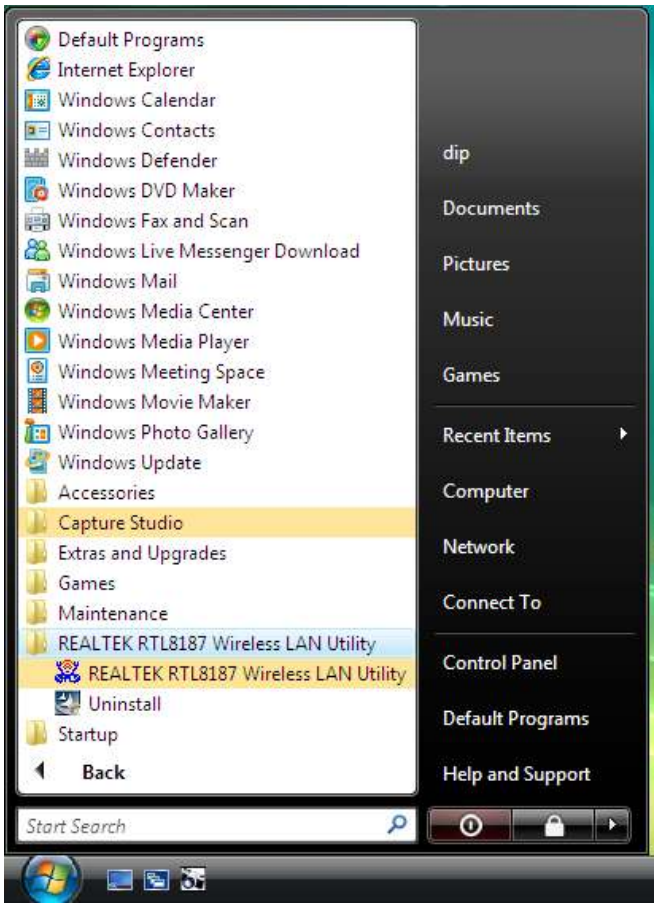
7. The system starts software installation of the AWN-11G-USB adapter.




8. Click **Finish** to complete the installation


REALTEK RTL8187 Wireless LAN Driver and Utility
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed REALTEK RTL8187 Wireless LAN Driver and Utility. Click Finish to exit the wizard.
< Back
Finish
Cancel

9. After click **Finish** to complete the installation, under Windows Vista <ALL Programs> menu, you will find the ID name of REALTEK USB wireless LAN Utility program installed.

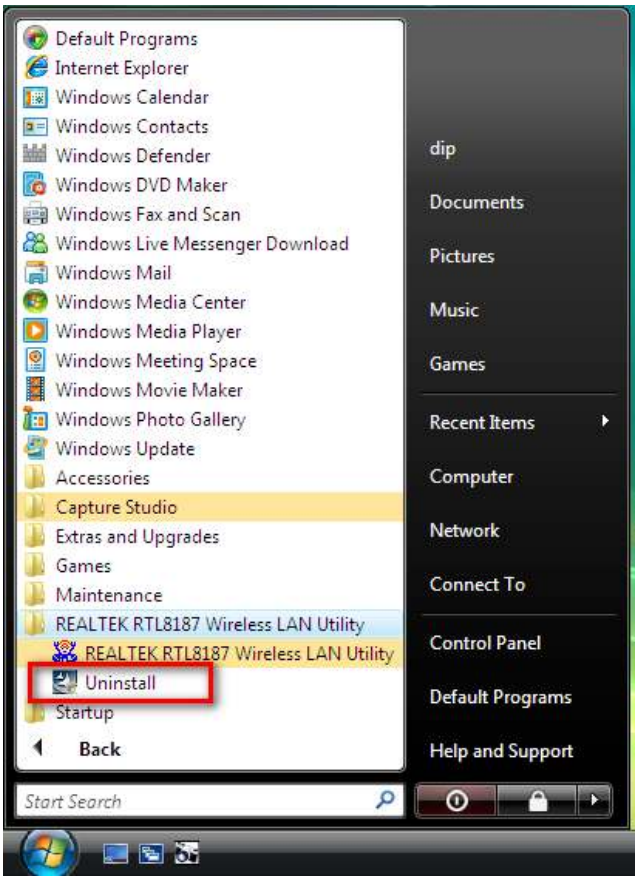


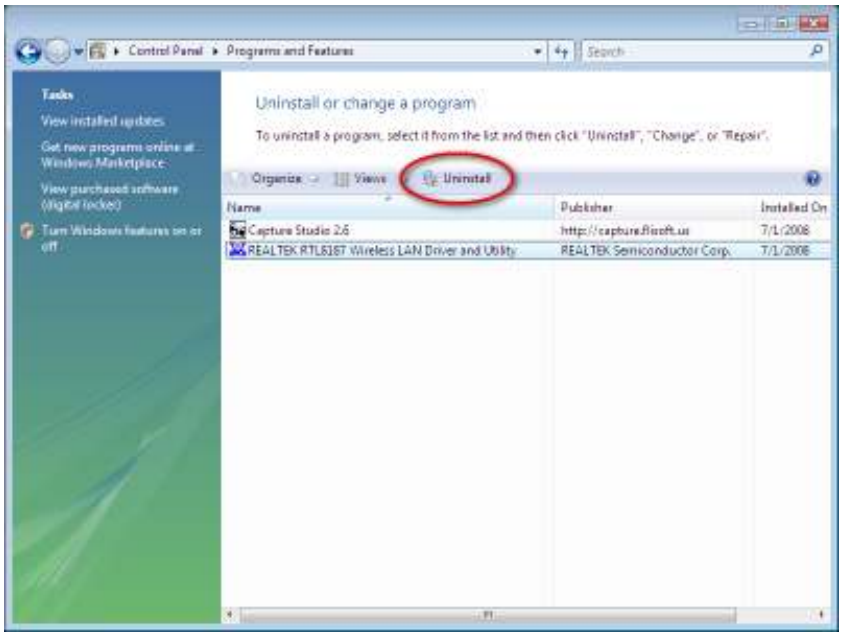

10. Insert AWN-11G-USB adapter into your computer's USB port, it will automatically detected and active the AWN-11G-USB adapter.

## 3.2 Uninstall

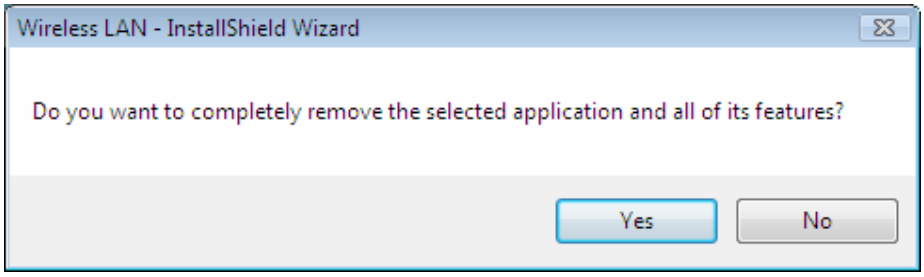
From “Wireless Network Driver and Utility” or “Control Panel” ”Change or Remove Programs”.

A. Uninstall the WLAN USB Adapter Driver from “Start” “All Programs” Click “Uninstall” (or “Change/Remove”) to remove the driver.

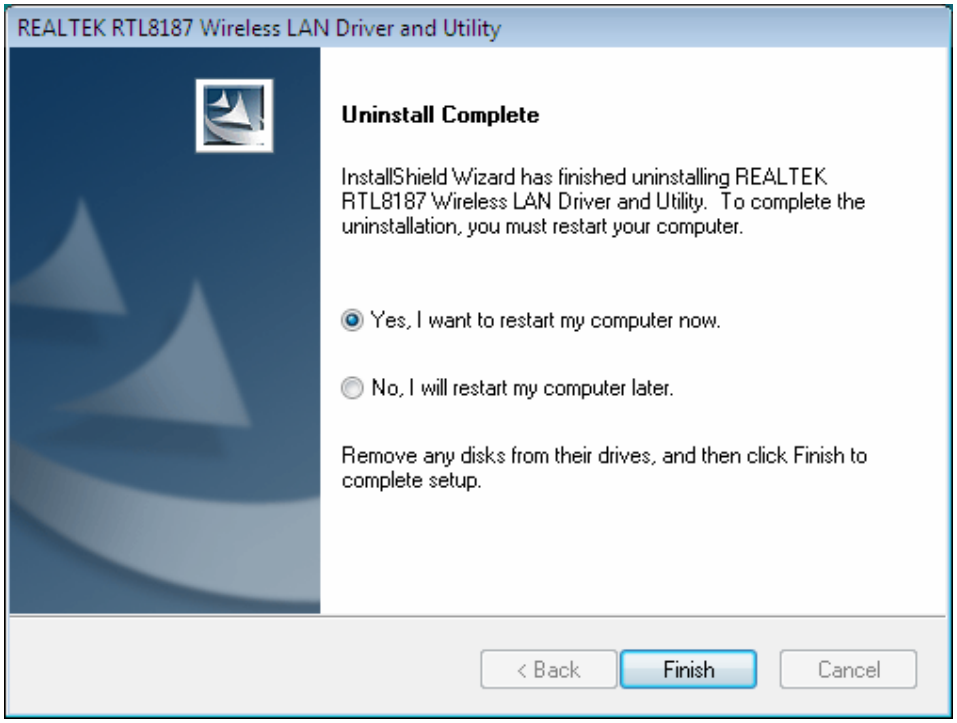


B. Click “**Yes**” if you want to remove the driver.

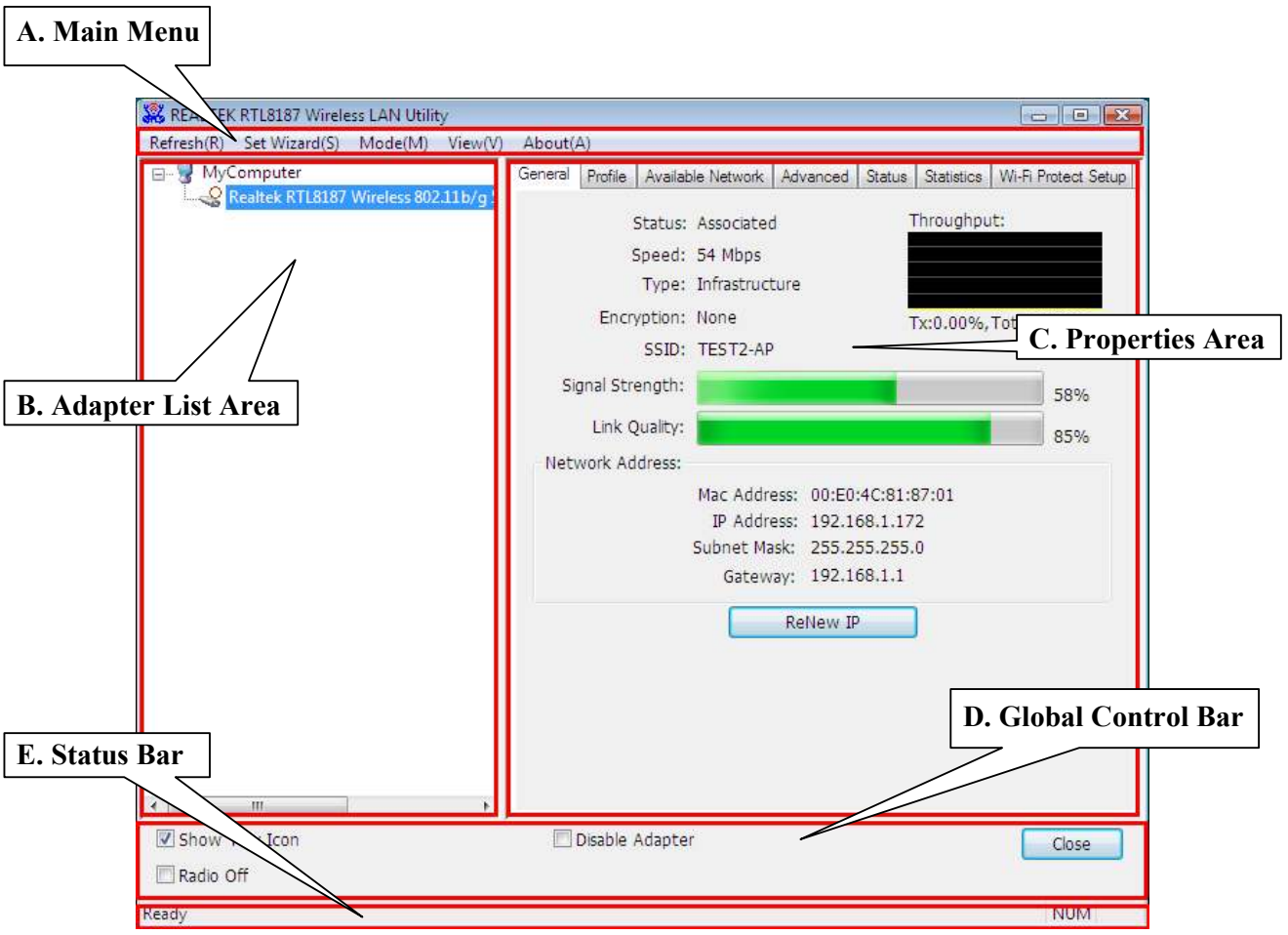

Wireless LAN - InstallShield Wizard
Do you want to completely remove the selected application and all of its features?
Yes
No

C. Click “**Finish**” to complete the uninstall


REALTEK RTL8187 Wireless LAN Driver and Utility
Uninstall Complete
InstallShield Wizard has finished uninstalling REALTEK RTL8187 Wireless LAN Driver and Utility. To complete the uninstallation, you must restart your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
< Back
Finish
Cancel

# Chapter 4: Wireless LAN Management Program

## 4.1 Introduction of Main Window




### A. Main Menu

The main menu includes five submenus.

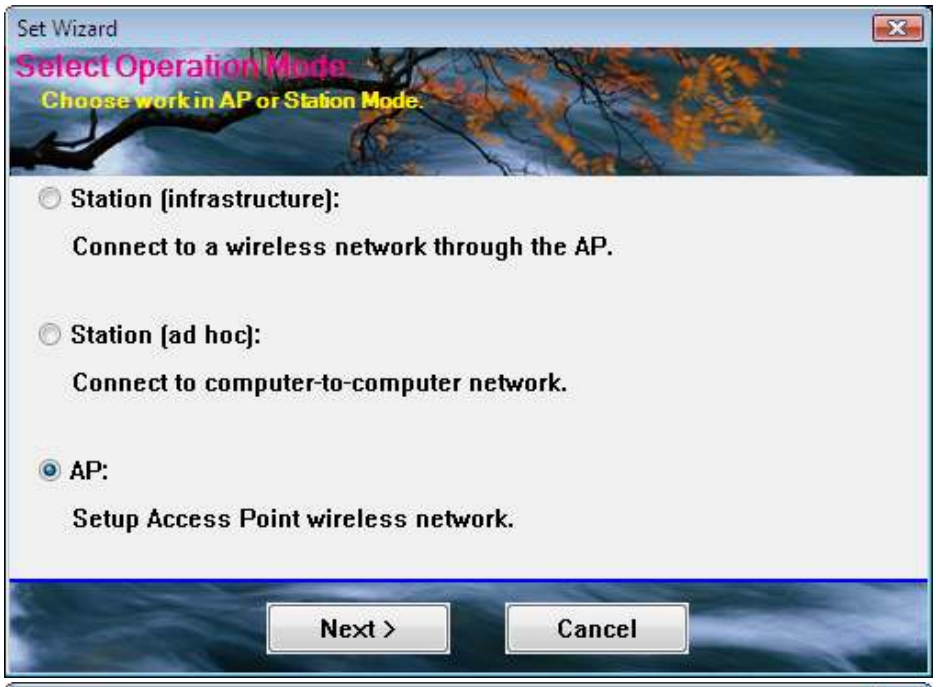
#### 1. Refresh(R)

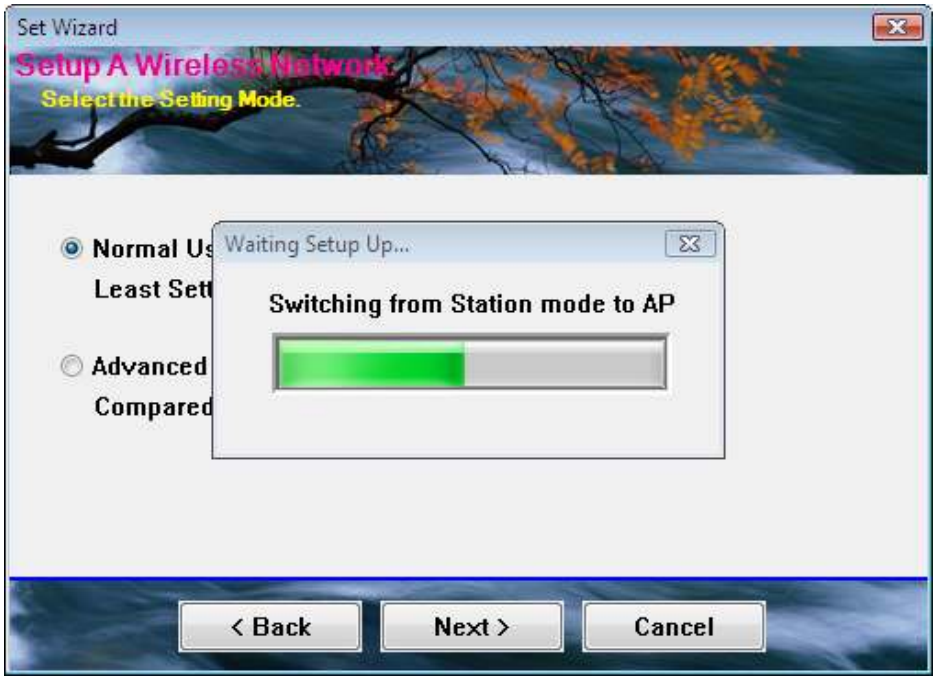
When clicking the refresh menu, you can update and re-enumerate the contents of adapter list area.

## 2. Set Wizard(S)

### 2.1 Wizard-1

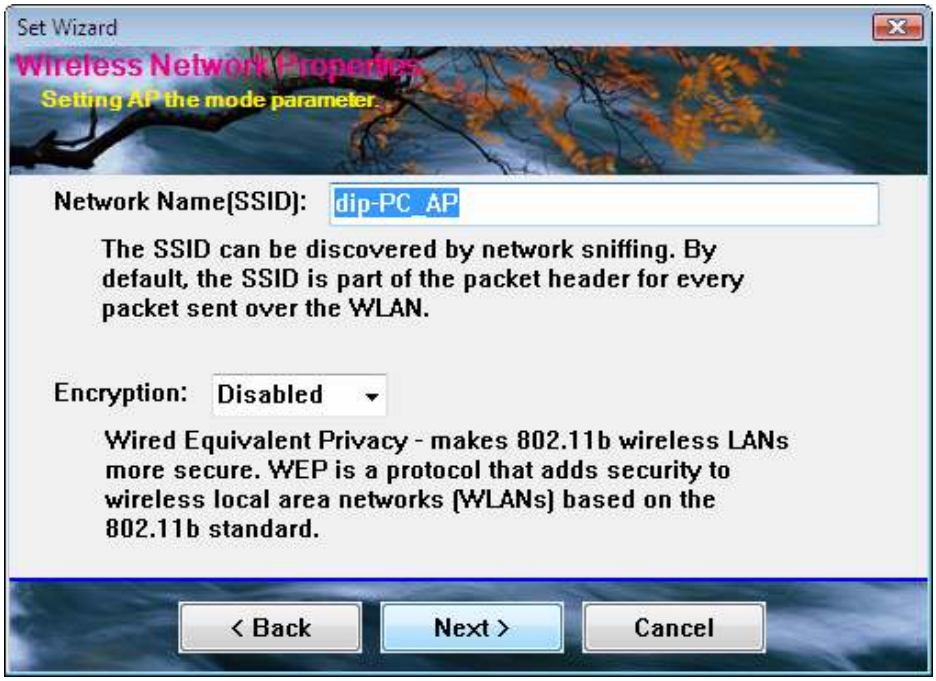
Click **Set Wizard(S)** menu to enter operation wizard. Click **AP**: Setup a wireless network. Next to continue. Cancel to leave wizard



## 2.2 Wizard-2

User defines wireless network Name [**SSID**] (less than 32 characters). You may skip wireless security setting, but we strongly recommend you to setup wireless security to avoid invalid users. Click "**Back**" if you want to go previous. Click "**Next**" to continue. "**Cancel**" to close wizard.


Set Wizard
Wireless Network Properties:
Setting AP the mode parameter.
Network Name(SSID):
dip-PC_AP
The SSID can be discovered by network sniffing. By default, the SSID is part of the packet header for every packet sent over the WLAN.
Encryption:
Disabled
Wired Equivalent Privacy - makes 802.11b wireless LANs more secure. WEP is a protocol that adds security to wireless local area networks (WLANs) based on the 802.11b standard.
< Back
Next >
Cancel

## 2.3 Wizard-3

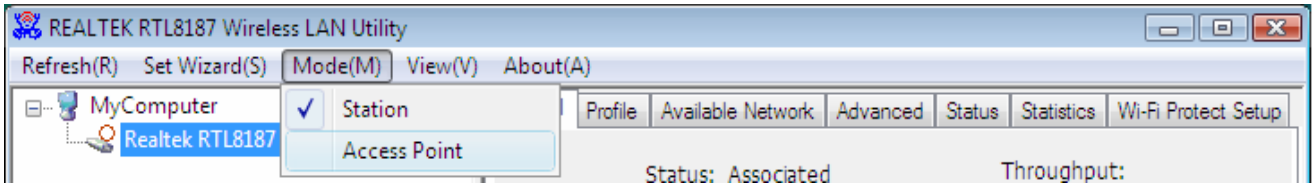
This page shows SSID & Security settings "**Back**" to go previous screen "**Next**" to continue. "**Cancel**" to close wizard.

## 2.4 Wizard-4

Show all settings under AP mode. Click “**Finish**” to complete wizard setup.

### 3. Mode (M)

Wireless configuration is quickly switched to be either [Station] or [AP].

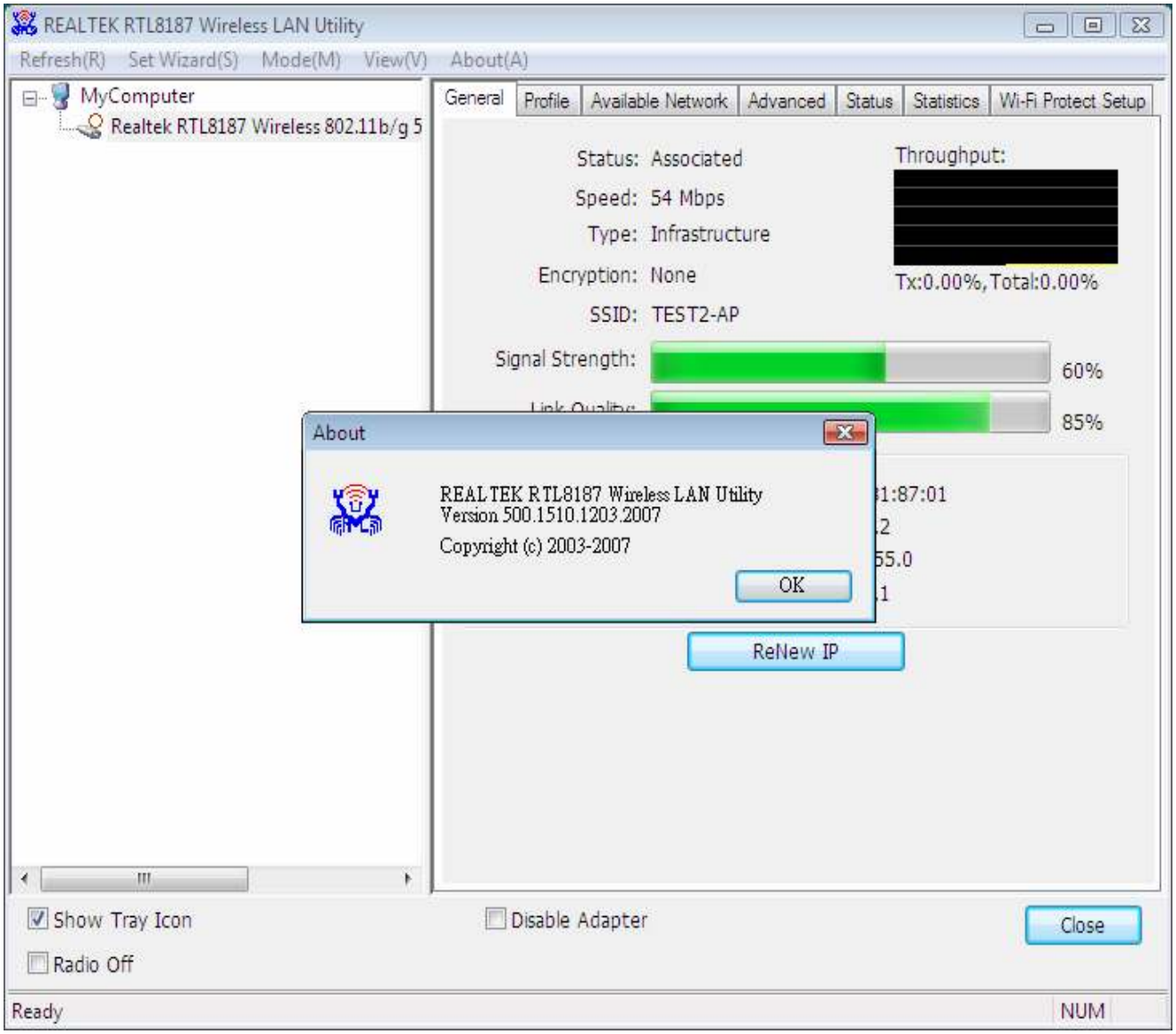



### 4. View (V)

Enable/disable the presence of E. Status Bar. Without the check mark (v) the E. Status Bar will be hidden.

### 5. About (A)

Click the “About” to show the about dialog. The application version and license information are shown in the about dialog.

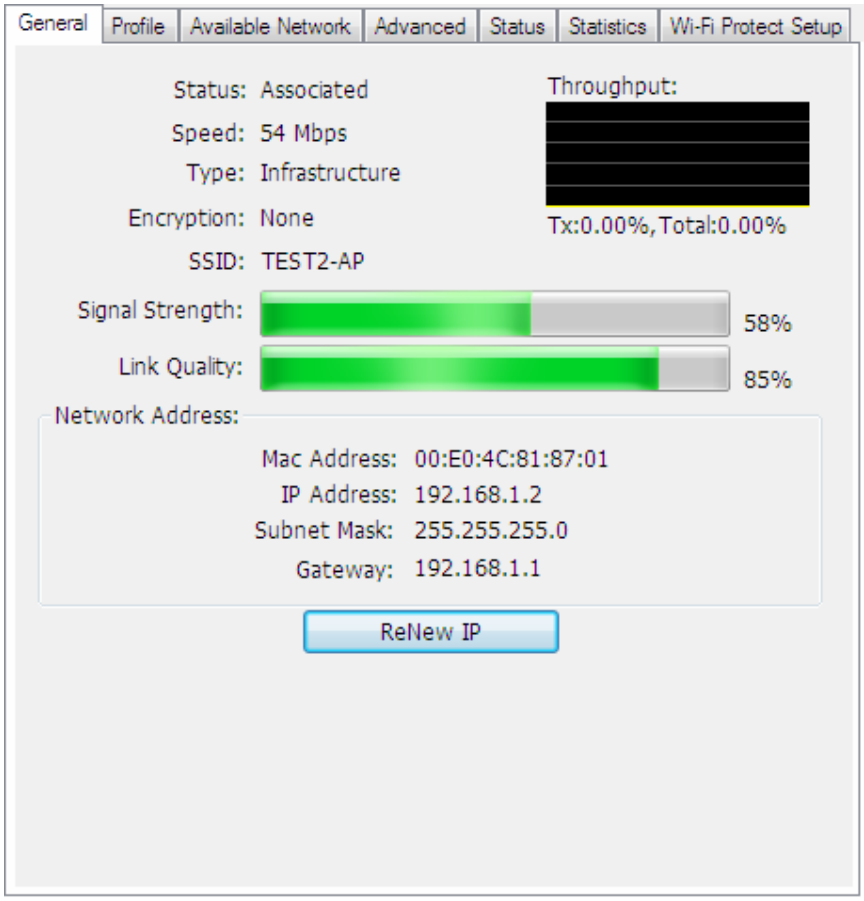


## B. Adapter List Area

All connected adapters on this system with multiple adapter installations are displayed in this area. It is easy for users to change the selected adapter by one click. The contents of properties area are dependant on wireless configuration that the selected adapter is set up. If only single adapter is installed on the system, then only one adapter is allow to be selected.

## C. Properties Area

The contents of this area are dependent on current wireless configuration. The current configuration is determined on previous explanation of submenu “Mode”. The more detailed contents are described in the following wireless configuration sections for both Station and AP mode

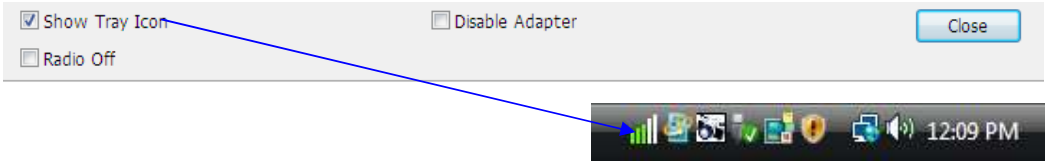


## D. Global Control Bar

Each control item on this bar affects the adapter or management GUI directly. Following are the available selections:

### Show Tray Icon

Checking "**Show Tray Icon**" and clicking "**Close**" button, the management GUI will be minimized and stay on the tray icon located at the right bottom corner of Windows. If not, management GUI will shut down while clicking "**Close**" button with unchecked condition

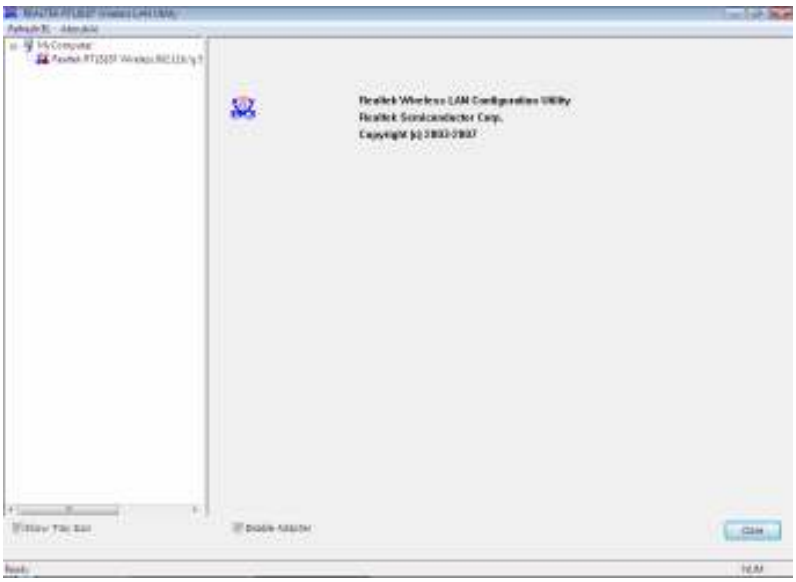



### Radio Off

Turn off the radio to save power. While the radio is off, the links with other wireless network will be disconnected. User should be aware that while the wireless configuration is in AP mode. The radio off will cause the sub network belonging to the AP to be disconnected with internet/intranet.

### Disable Adapter

Stop wireless USB device.

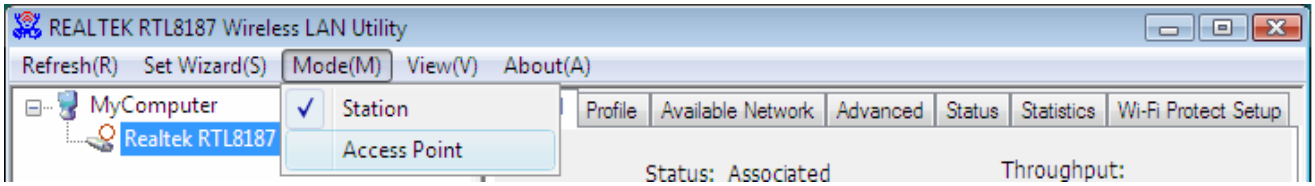


### E. Status Bar

The status of the management GUI are presented in the status bar.

## 4.2 Station Mode

The following explanations focus on the properties area.

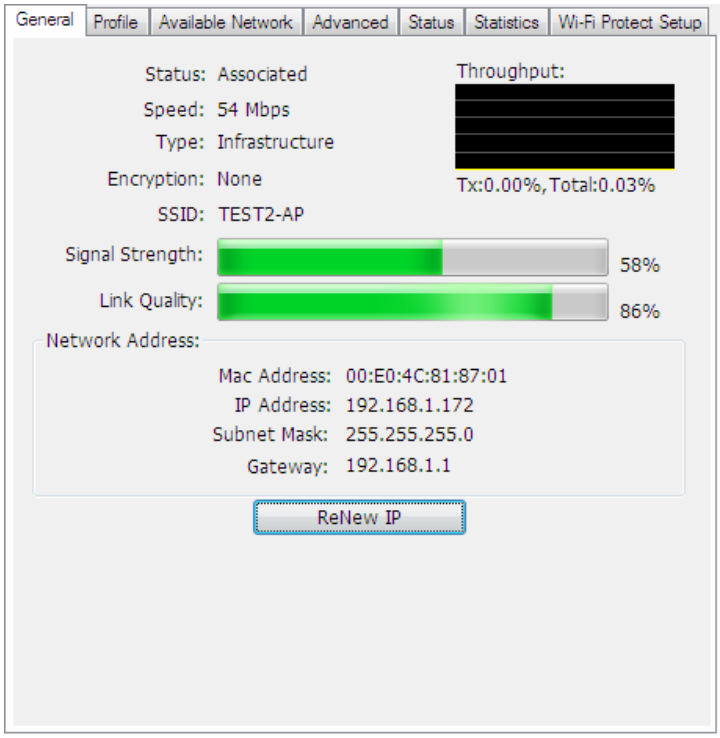



**Infrastructure and Ad-Hoc**

With both Infrastructure and Ad-Hoc types, the properties should look like the picture above. Six property pages present different information of current wireless network status. Please read the following explanations before you reviewing these pages, it will help you to understand the wireless environment around the system. It is easy to switch to property pages just by clicking left button of mouse on the title of each page. The following six sections describe detailed information of each page.

## A. General Page

This page provides the general information of this adapter.




### 1. Status

The status of station connection to Router or AP.

### 2. Speed

Current transition speed in Mbps.

### 3. Type

Current wireless LAN configuration type.

### 4. Encryption

Current encryption mode used.

### 5. SSID

Name of wireless network.

### 6. Signal Strength

The average signal quality of packets received from wireless network.

### 7. Throughput Diagram

Current throughput, including transmission (Tx) and total traffic (Total).

### 8. Network Address

Mac Address: six two-digital number of this Wireless LAN USB adapter

IP Address: assigned network address by DHCP server or self-definition in four three-digital number format.

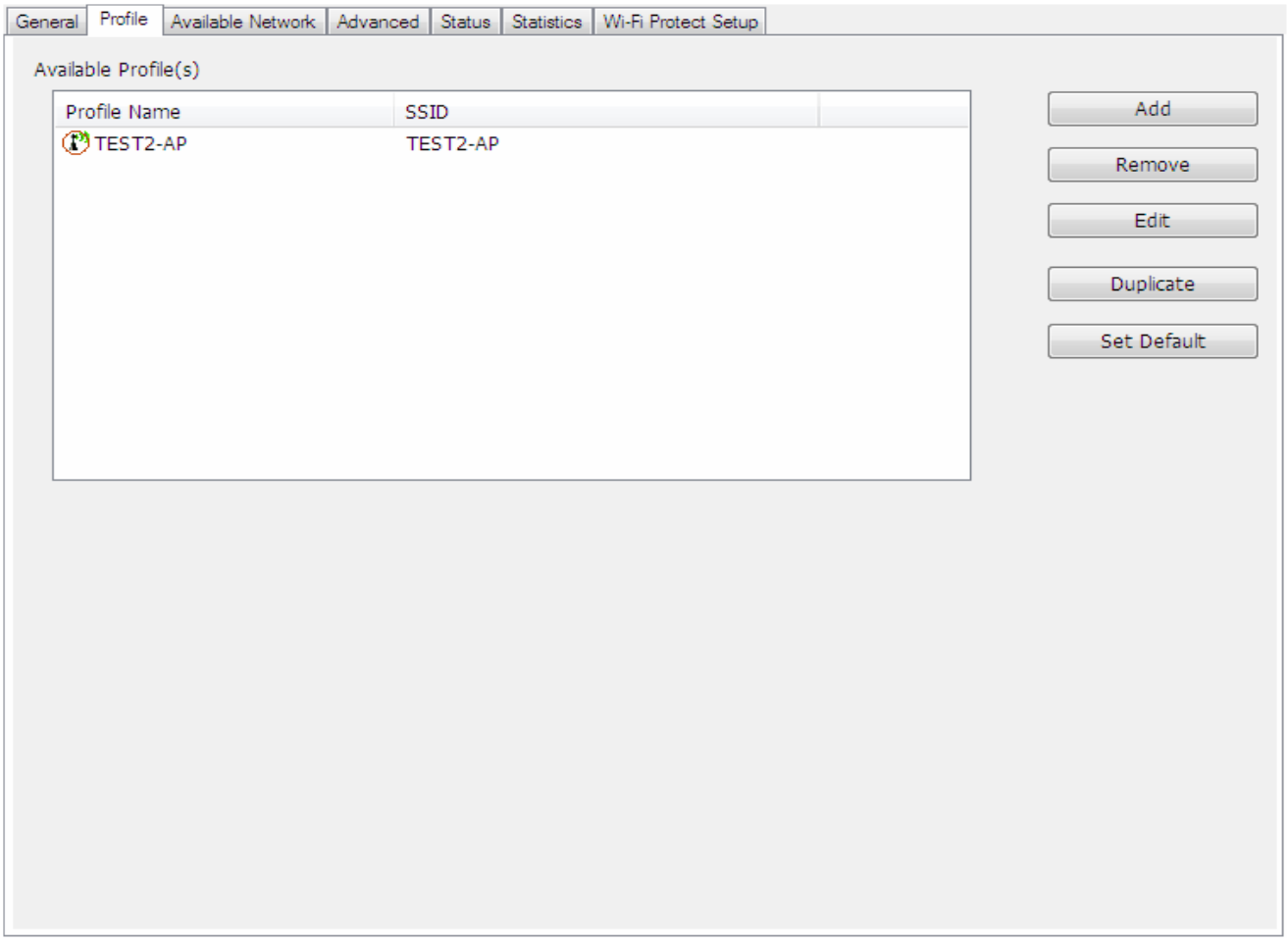
- Subnet Mask: the only valid value is 2555.255.255.0
- Gateway: It comes from connected AP. Your system can not connect to internet if this field is empty.

**B. Profile Page**

This page provides profiles management such as add, remove, edit and duplicate just by pressing the corresponding button.

**Available Profile(s)**

The list box shows all the created profiles.




**1. Add**

Add a new profile for AP or IBSS (Ad-Hoc mode).

**2. Remove**

Remove the selected profile.

**3. Edit**

Edit contents of selected profile.

**4. Duplicate**

Make copy of selected profile.

**5. Set Default**

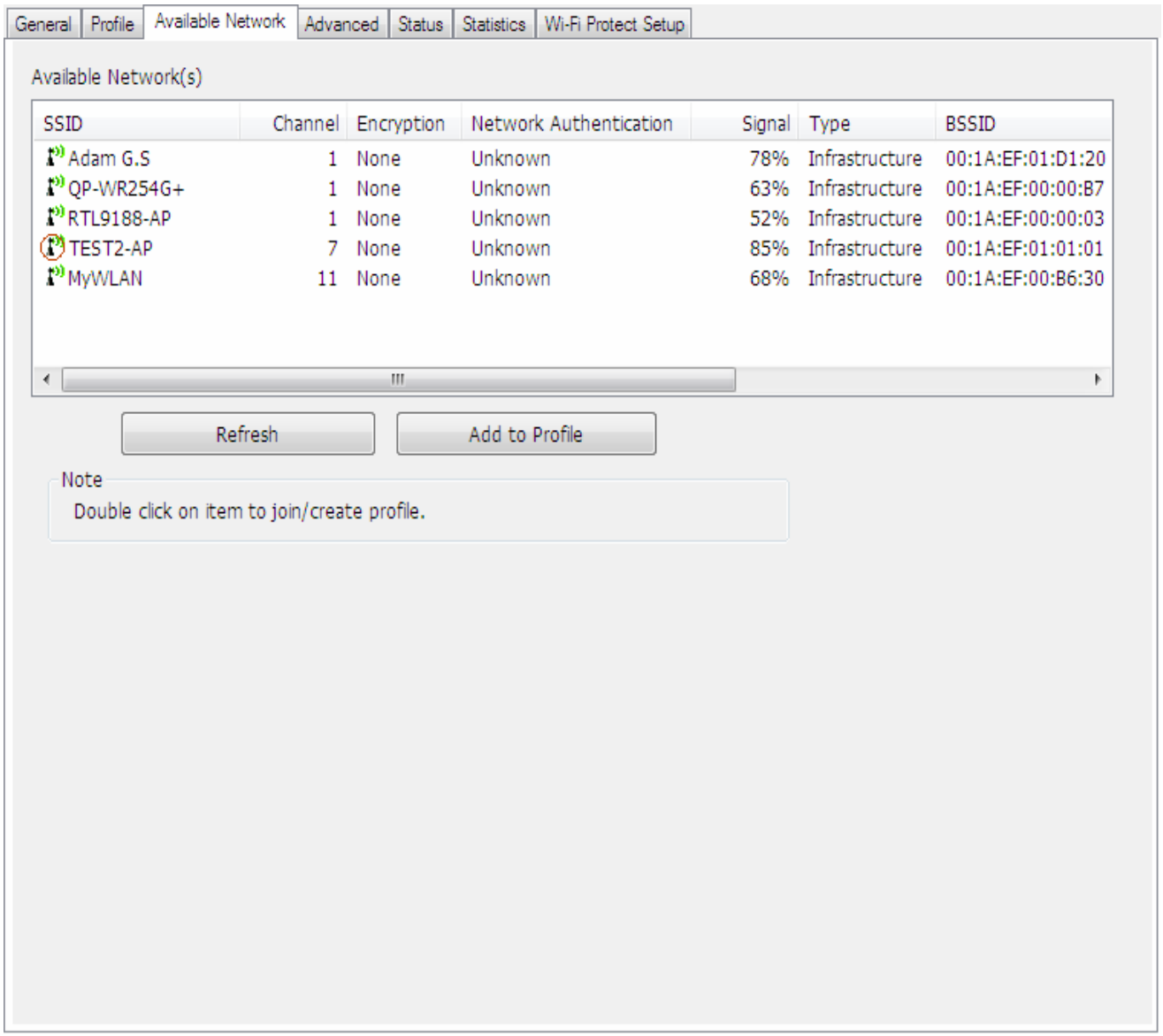
Set the selected profile as default selection.

**6. Available Network Page**

This page presents all BSS, including AP and IBSS, around this system. You can pick any one of these network connections.

### C. Available Network(s)

Show network connection around this system



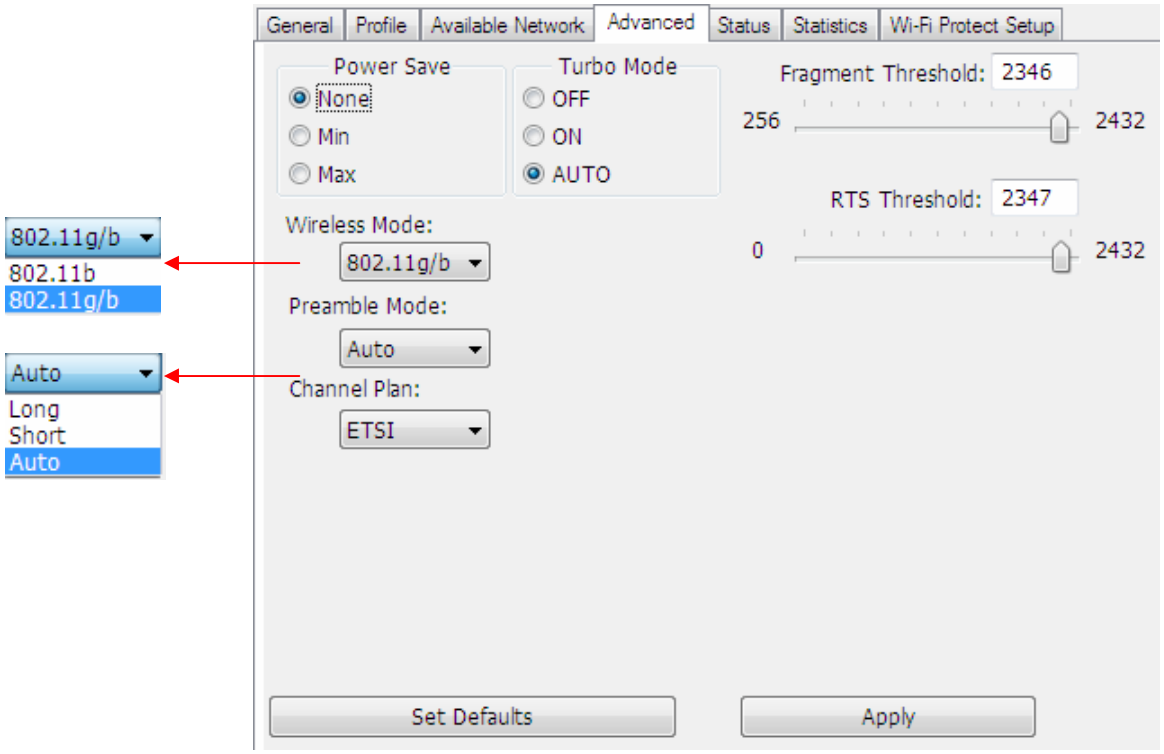

#### 1. Refresh

Rescan network connection around this system.

#### 2. Add to Profile

Create profile for selected network connection and add it to profile list.

## D. Advanced Page




### 1. Power Save

None: without power save function.

Min: wake up more frequently to receive packets.

Max: wake up less frequently to receive packets.

### 2. Wireless Mode

802.11b

802.11g/b

### 3. 802.11b Preamble Mode

Long: higher quality but with lower performance than preamble short mode.

Short: Normal quality but with higher performance than preamble long mode.

Auto: use the preamble mode of current.

### 4. Fragment Threshold

This indicates the threshold of fragment length. Higher threshold will increase data transfer rate and better performance with good signal quality. However; in a poor signal quality environment, data throughput might be worse on high fragment threshold than lower fragment threshold setting.

### 5. RTS Threshold

Threshold of Request-To-Send mechanism. The RTS frame will not send out until the packet size over threshold.

### 6. WOL (Wake On LAN)

The wake-on-LAN is applied for remote control purpose. You could wake up a system through network packets. For Wireless LAN USB Adapter, only the same adapter on another system could wake it up. Input MAC Address: the six two-digit numbers of Wireless LAN USB Adapter on target system.
Wake Up: click this button to wake it up.

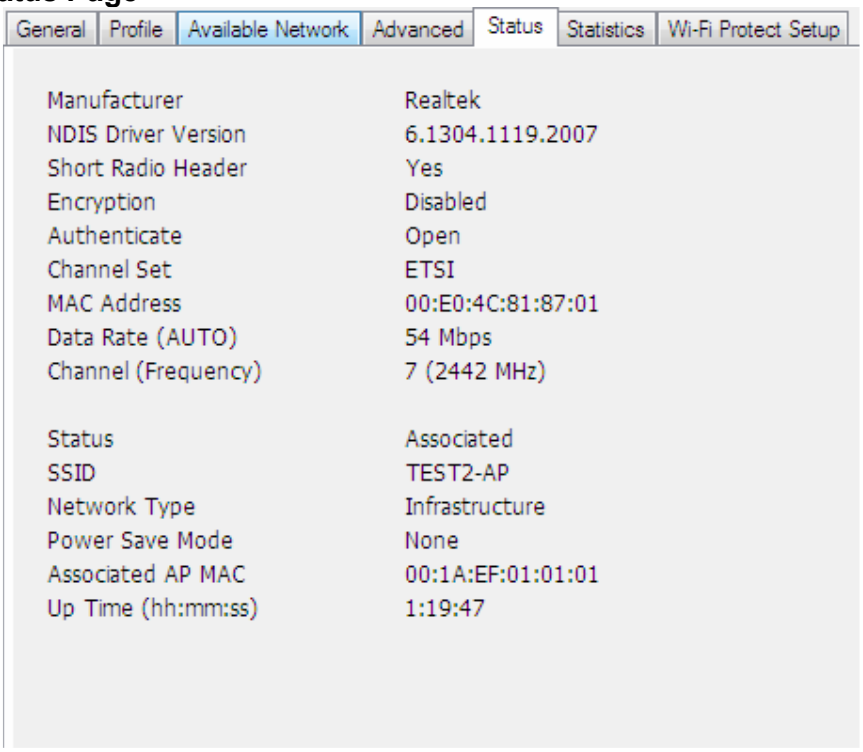
### 7. Set Defaults

Restore the default value to be current settings.

### 8. Apply

Apply the current settings to GUI.

## E. Status Page




### 1. NDIS Driver Version

Driver version

### 2. Short Radio Header

Yes

### 3. Encryption

Current encryption mode

**4. Authenticate**

Authentication state

**5. Channel Set**

Selected channel plan currently

**6. MAC Address**

MAC address of this adapter

**7. Data Rate**

Wireless LAN transition speed

**8. Channel (Frequency)**

Current channel number

**9. Status**

Wireless network status

**10. SSID**

Name of connecting AP

**11. Network Type**

Indicate current network configuration type

**12. Power Save Mode**

Current setting power save mode

**13. Associated AP MAC**

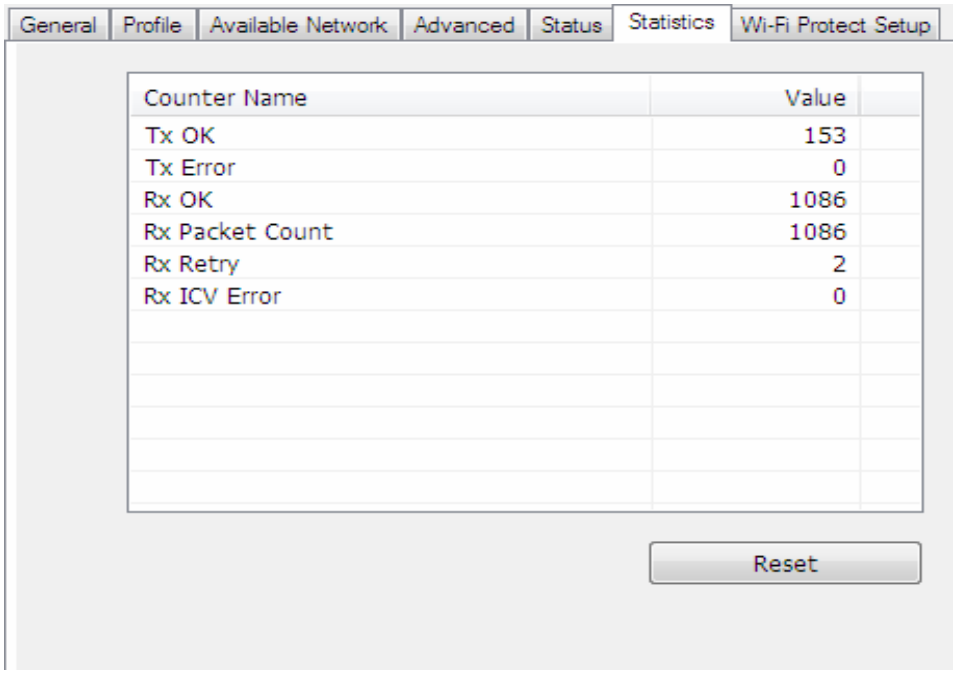
MAC address of connecting AP

**14. Up Time**

Total connection time

## F. Statistics Page

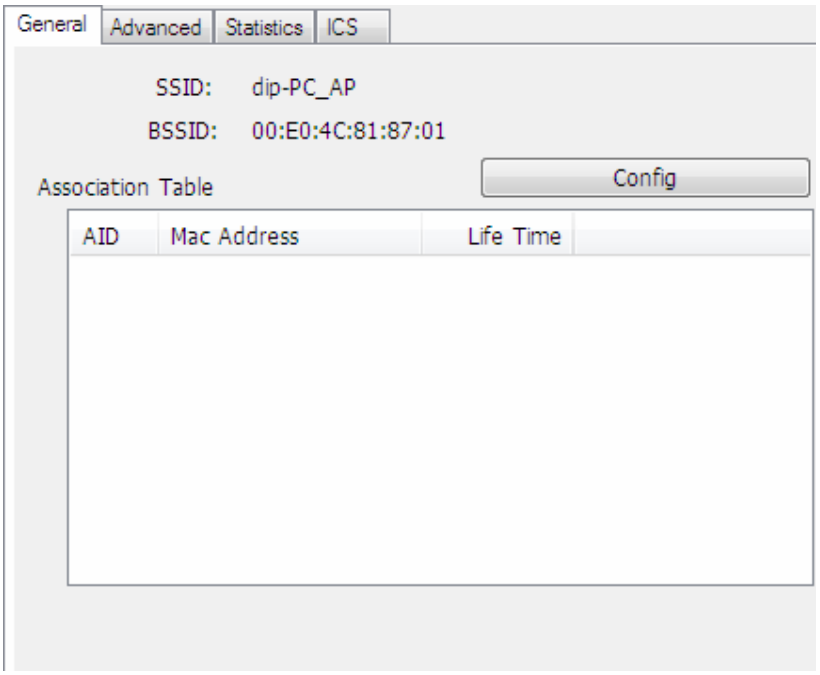
You could watch the Tx/Rx status of current wireless connection. This page shows a statistic analysis of packet transition.



## 4.3 AP Mode

### A. General Page

This page provides general information of this AP, including name, MAC address and list of joined stations.




**1. SSID**

The name of this AP.

**2. BSSID**

Six two-digital numbers of the MAC address of this AP.

**3. Association Table**

It is the list of joined stations to this AP.

**4. AID (Association ID)**

The AID field is a value assigned by an AP during association that represents 16-bit ID of a station. It is a unique value assigned by AP.

**5. MAC address**

It is the six two-digit numbers that assemble the MAC address of respected joined station.

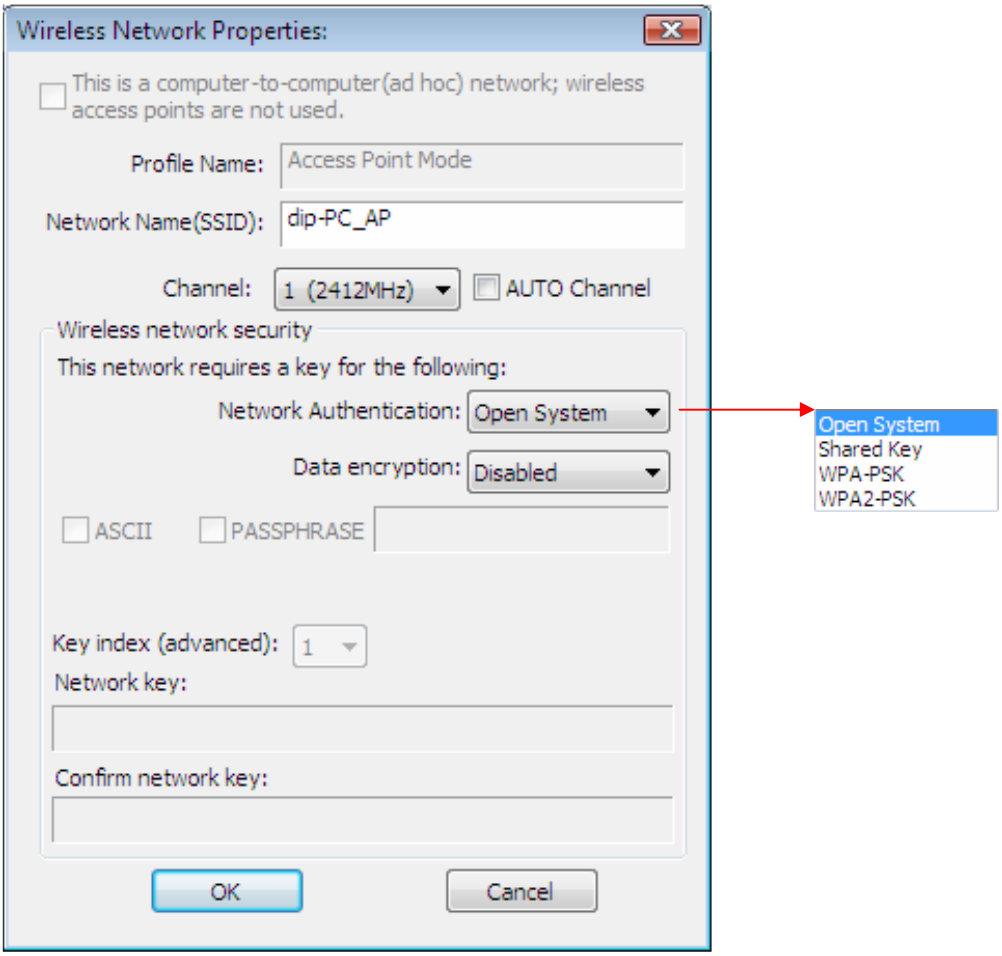
**6. Life Time**

It is the timer that counts down from 10 minutes whenever the AP connects the

station successfully. If an STA associated to SW AP does not have any interaction with the AP in 10 minutes, it will be disassociated from the Infra-structure BSS.

## 7. Config

A dialog of this AP is shown for configuration modification.




### 7.1 Network Name (SSID)

Name of the AP searchable by other wireless nodes. The length of SSID should be shorter than 32 characters.

### 7.2 Channel

Select the wireless channel within current channel plan.

### 7.3 Network Authentication & Data Encryption

There are three types of authentication:

- Open System

It is combined with data encryption type to be WEP or to be disabled.

Encryption ~ disabled: you decide to open this AP to every one without network authentication.

Encryption ~ WEP: you decide to setup the basic data encryption with a defined network key.

- Shared Key + WEP

You decide to apply both authentication and data encryption to prevent unauthorized login.

- WPA-PSK + TKIP & WPA2-PSK + TKIP

The most advanced authentication and data encryption that provide the best security protection.

### 7.4 ASCII/ PASSPHRASE

The most advanced authentication and data encryption that provide the best security protection.

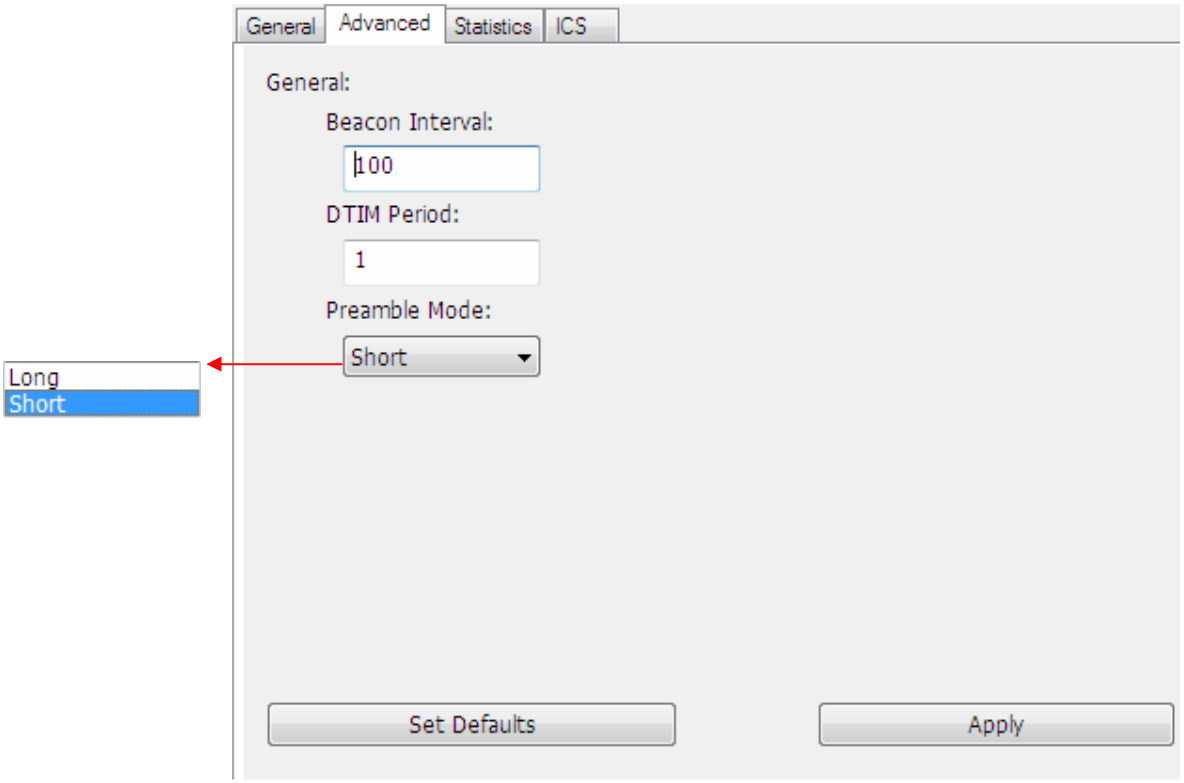
- ASCII: You should provide either 5 or 13 ASCII characters on Network key edit box.
- PASSPHRASE: You could input words on Network Key edit box.
  64 bits: The generated pass key is 64-bit to be complied with data packets.
  128 bits: The generated pass key is 128-bit to be complied with data packets.
- Hexadecimal: While both ASCII and PASSPHRASE are not checked, you should input hexadecimal number in the network key box. For example, 10 digits hex number for 64-bit WEP or 26 digits hex number for 128-bit WEP.

### 7.5 Key index (1 ~4)

At most four key index to represent the opposite network key.

## B. Advanced Page

Users could setup the advanced characteristics of network packet for transmission on this page.




### 1. Beacon Interval

This filed indicates the interval between each beacon that this AP sends out in unit of TU (1024 micro-seconds).

### 2. DTIM Period

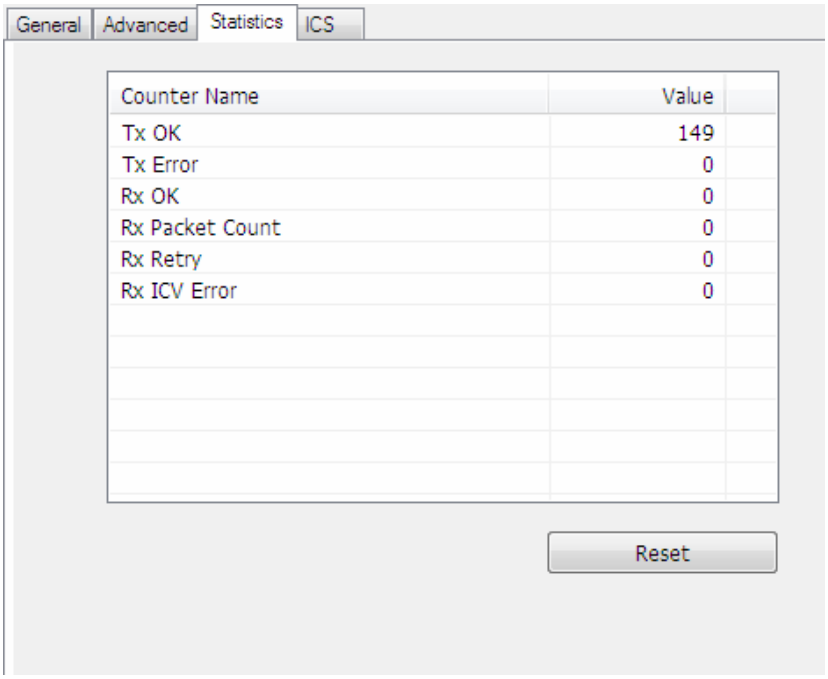
The DTIM Period field is the number of Beacon intervals between successive DTIMs.

### 3. Preamble Mode

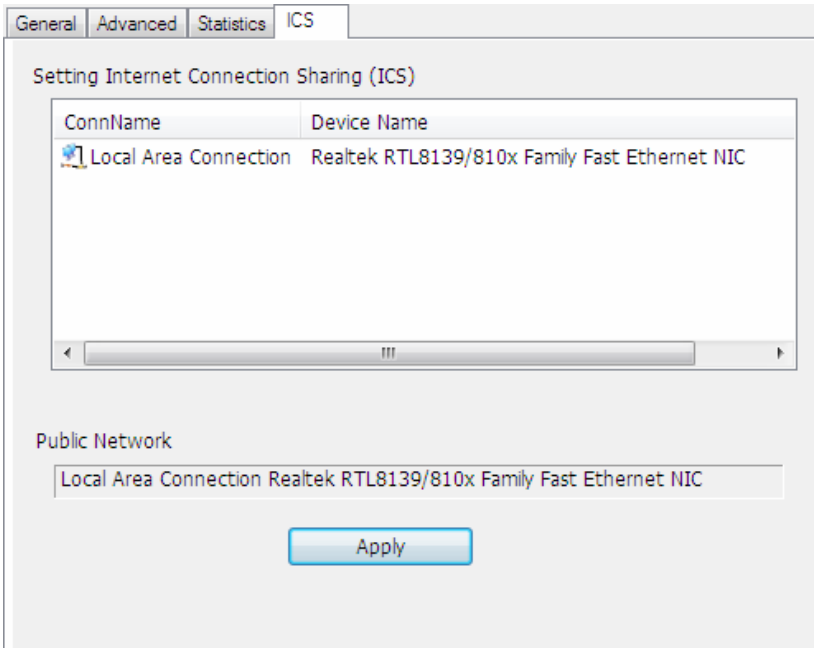
- Long: higher quality but with lower performance than preamble short mode.
- Short: Normal quality but with higher performance then preamble long mode.
- Auto: select the proper preamble mode by current signal frame information.

### C. Statistics Page

The Tx/Rx status of current wireless connection is shown. A statistic analysis of packet transition is listed.




### D. ICS Page




#### 1. ConnName

List all network connections to this system. You can pick up one from the listed item(s) whose network domain you would want to connect to.

**2. Select**

Make the desired network connection to public network.

**3. ICS**

Internet Connection Sharing. It enables this AP to create the domain to share this internet/intranet network connection.

**4. Firewall**

Security setting that blocks unauthorized users from gaining access to a computer network, or prevents them from monitoring transfers of information to and from the network.

**5. Apply**

Execute the current settings.